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# Morag Watson

## Director of Policy

### Scottish Renewables



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# Ivan McKee MSP

## Minister for Business, Trade, Tourism and Enterprise



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# The turning tide – bridging the divide between potential and powerhouse



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## **Caitlin Byers**

Development Manager (Integration & Transition), Crown Estate Scotland

## **Richard Arnold**

Policy Director, UK Marine Energy Council

## **Henry Jeffrey**

Head of Policy and Innovation Group, Institute for Energy Systems, The University of Edinburgh

## **Tim Hurst**

Managing Director, Wave Energy Scotland

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# Fireside chat



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# Claire Mack

## Chief Executive

### Scottish Renewables



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# Andrew Smith

Partner

Greenbackers Investment Capital

# Alasdair Campbell

Investment Executive, Asset Management  
InfraRed Capital Partners Limited

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# Leaders debate: between the devil and the deep blue sea. Making Scotland's marine energy ambitions a reality



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# Elain MacRae

## Head of Energy Strategy Highlands and Islands Enterprise



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# Andrew Scott

## Chief Executive Officer

### Orbital Marine Power



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# ORBITAL

MARINE POWER

ANDREW SCOTT

CHIEF EXECUTIVE OFFICER

0

2018



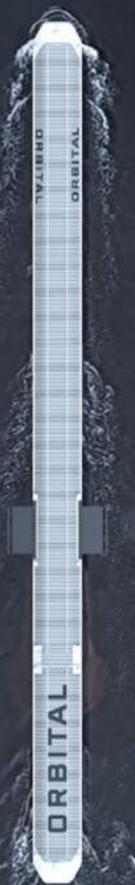
2019

2020

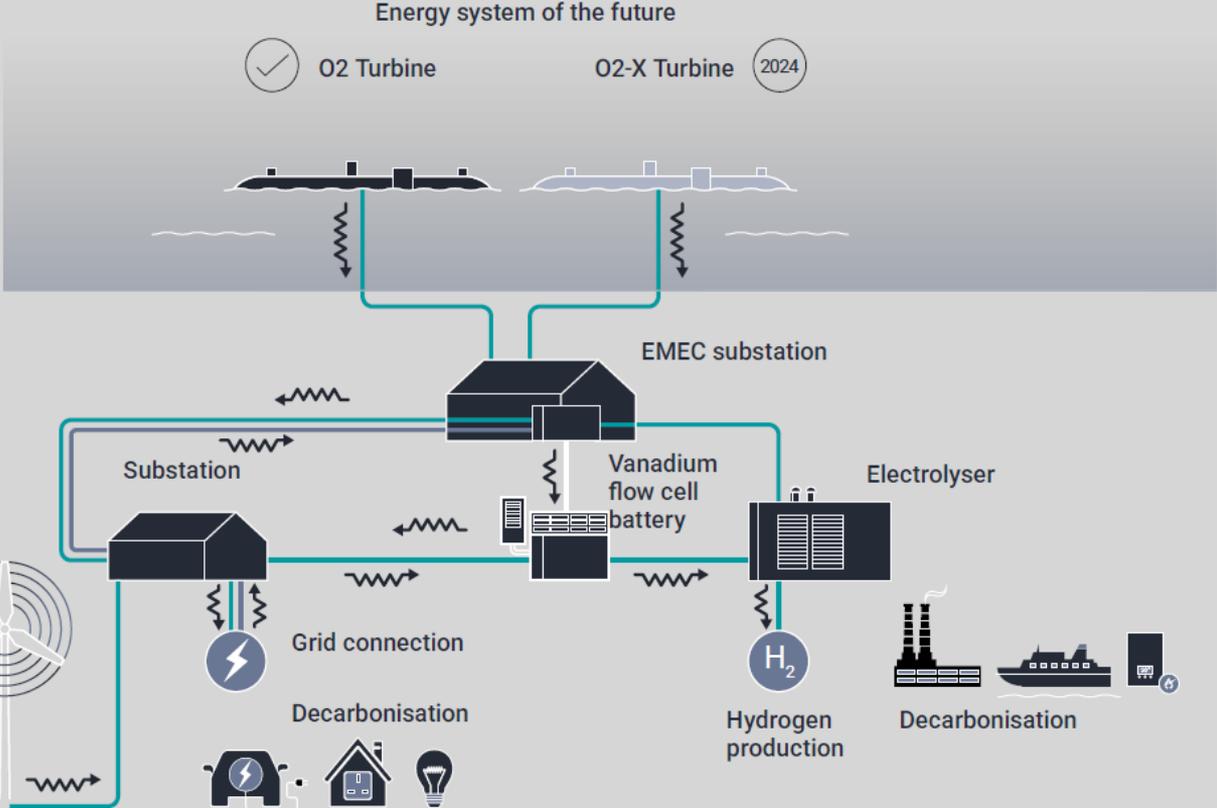


2021

2022+



# Energy system of the future





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# Gavin McPherson

## Head of Policy & Research

### Nova Innovation



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# Cameron McNatt

## Managing Director

### Mocean Energy Ltd



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# Our wave energy developments

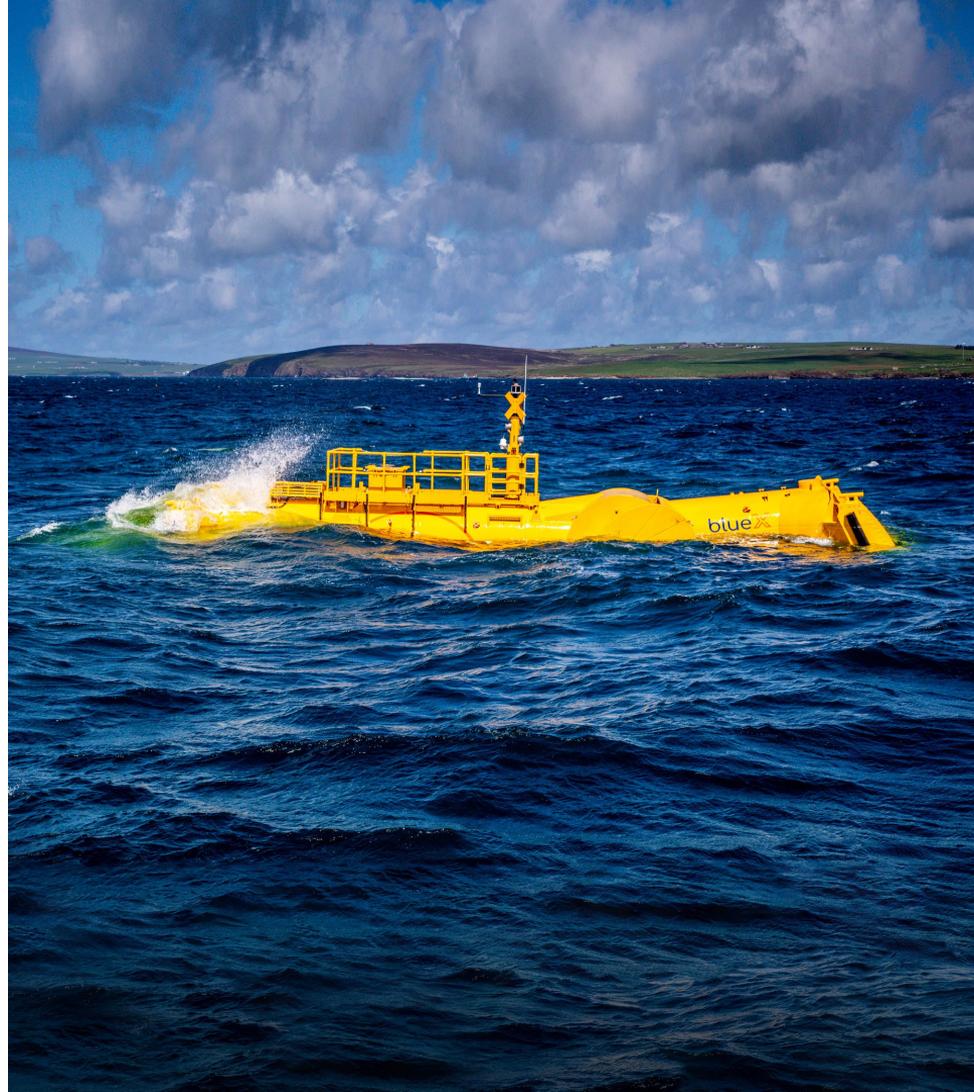
## **Cameron McNatt**

Managing Director  
Mocean Energy  
[cameron.mcnatt@mocean.energy](mailto:cameron.mcnatt@mocean.energy)

Prepared for Scottish Renewables Marine Conference 2022

25 May 2022

[www.mocean.energy](http://www.mocean.energy)



# Who are Mocean Energy?



Mocean was founded in 2015

Offices in Edinburgh, Aberdeen & Orkney, Scotland.

£8.2m invested in technology development

Team of 17 industry leaders, covering 8 nationalities,

- Trust
- Expertise
- Awesomeness
- Morals

We envision a world where:

*People live in harmony with the ocean and each other through sustainable energy*



# Technology

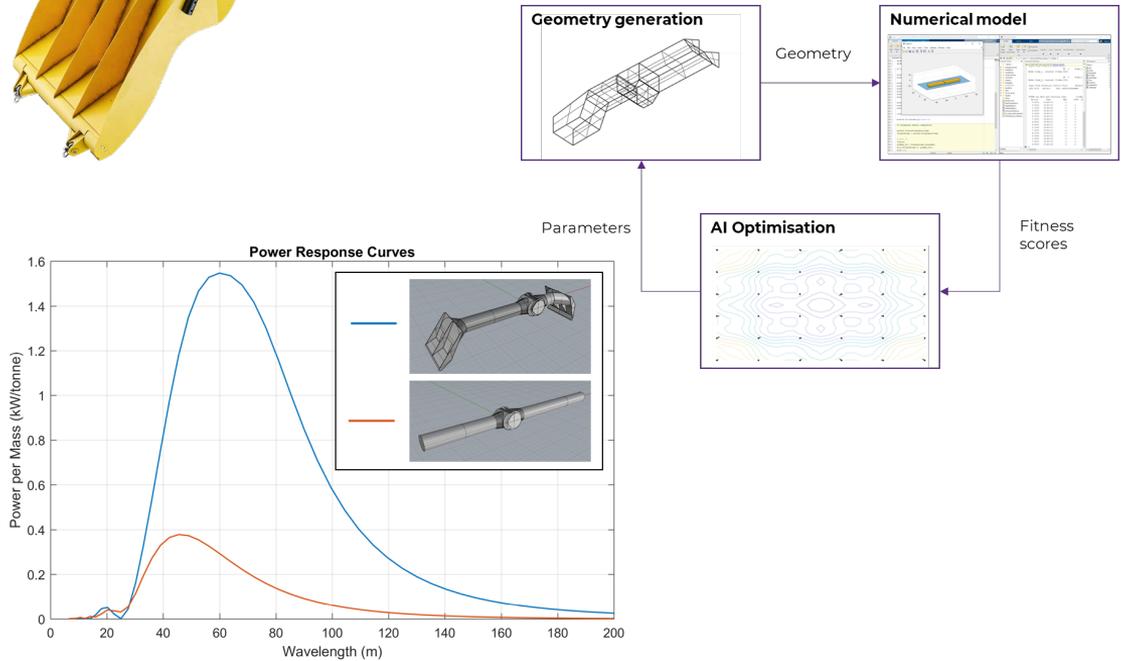
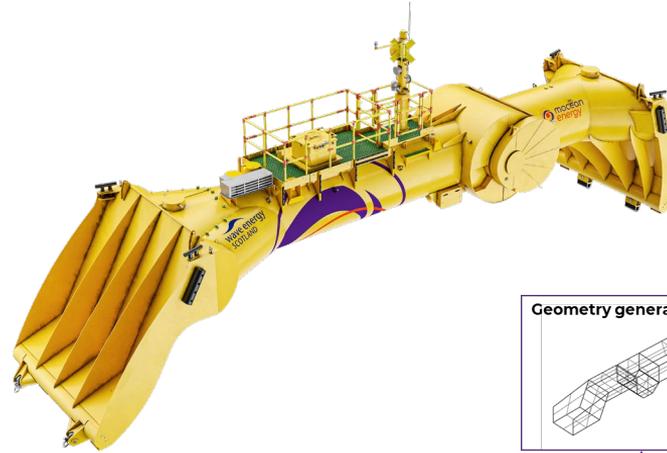


## Innovations:

- Novel geometry – *patented*
- Software optimisation
- Direct drive generator

## Benefits:

- Performance
- Survivability
- Reliability
- Maintainability
- Not depth limited



# Blue X testing



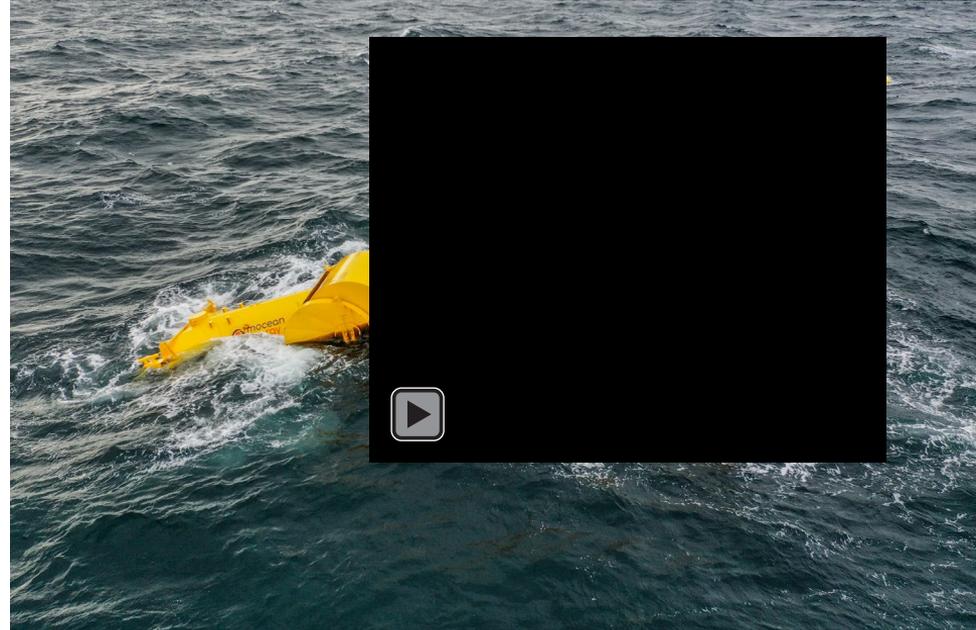
Tested our Blue X device from June – November, 2021

At European Marine Energy Centre's Scapa Flow test site in Orkney.

Supported by WES and Ocean DEMO

This testing provided invaluable lessons learned:

- **Power production:** up to 5 kW sustained power and 30 kW instantaneous peak power.
- **Communications:** 99.99% comms system uptime
- **Survivability:** diving through waves to shed loads, equipment autonomously entering survival mode
- **Reliability:** no major equipment failures.
- **Operations and maintenance:** installation, removal, access as sea, quick-turn-around maintenance.



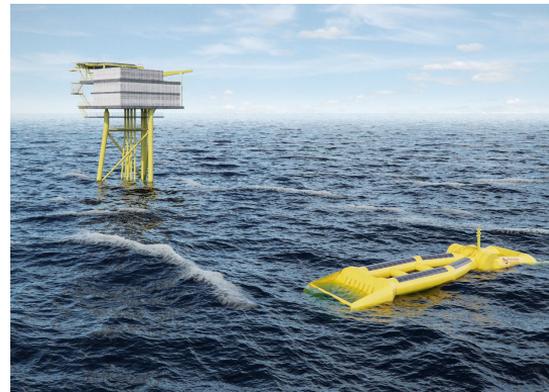
# Technology Roadmap

Our design process, learning by doing, and early revenues accelerates the development of larger scale technologies.



**Small scale:** 10's kW, *Blue Star*

Subsea tiebacks, residential robotics, marine domain awareness.



**Mid scale:** 100's kW, *Blue Horizon*

Small platforms, aquaculture, islands, remote communities, vessel charging.



**Grid scale:** MW's, *Blue Horizon*

Combined wind-wave farms, large offshore platforms, islands.

# Renewables for subsea power

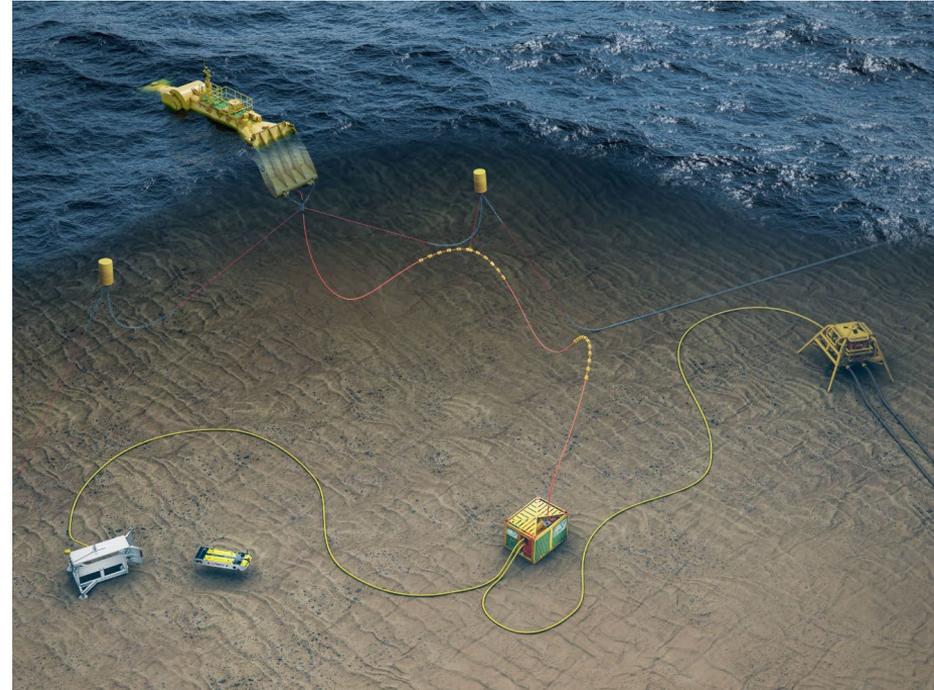


In 2022, in Orkney, we are testing a system:

- Mocean Energy: Blue X
- Verlume: subsea batteries
- Transmark Subsea: autonomous underwater vehicle
- Baker Hughes: subsea control system

Funded by:

- Net-zero Technology Centre
- £600k from Industry – Harbour Energy, Serica Energy

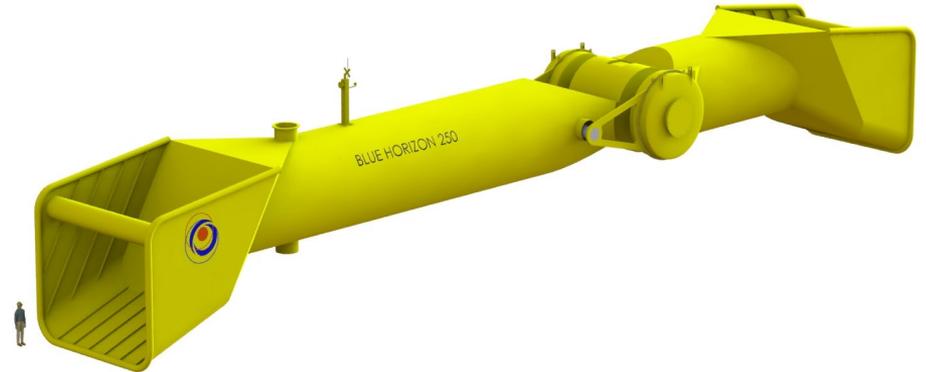


# EuropeWave Phase 1

Mocean were awarded a Phase 1 contract in the EuropeWave programme where we are developing a 250 kW WEC – Blue Horizon 250

Key features:

- Power: 250 kW
- Mass: 350 tonnes
- Length: 50 m
- PTO: direct-drive electrical





## People living in harmony with the ocean and each other through sustainable energy

### Cameron McNatt

Managing Director  
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+44 (0)7852 328117

Prepared for Scottish Renewables Marine Conference 2022

25 May 2022

[www.mocean.energy](http://www.mocean.energy)



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# Sean Parsons

## Director of External Affairs

### SIMEC Atlantis



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## **Andrew Scott**

Chief Executive Officer, Orbital Marine Power

## **Gavin McPherson**

Head of Policy & Research, Nova Innovation

## **Cameron McNatt**

Managing Director, Mocean Energy Ltd

## **Sean Parsons**

Director of External Affairs, SIMEC Atlantis

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**LOW-CARBON  
HEAT  
CONFERENCE**  
09 JUNE 2022  
GLASGOW

**ENERGY  
TRANSITION  
SEMINAR: A  
WELCOME TO  
OFFSHORE WIND**  
24 AUGUST 2022  
ABERDEEN

**NET-ZERO  
ENERGY  
TRANSITION  
AWARDS** **NEW**  
25 AUGUST 2022  
ABERDEEN

**SEMINAR: ENABLING  
THE DEPLOYMENT  
OF RENEWABLES  
THROUGH MARKET  
MECHANISMS**  
27 OCTOBER 2022  
ONLINE

**ONSHORE  
WIND  
CONFERENCE**  
07 SEPTEMBER 2022  
GLASGOW

**FLOATING  
OFFSHORE  
WIND**   
12-13 OCTOBER 2022  
ABERDEEN

**THE SCOTTISH  
GREEN  
ENERGY  
AWARDS™**  
01 DECEMBER 2022  
EDINBURGH

**OFFSHORE  
WIND  
CONFERENCE**  
25 & 26 JANUARY 2023  
GLASGOW

**NET-ZERO  
ENERGY  
CONFERENCE  
& DINNER**  
21 & 22 MARCH 2023  
EDINBURGH



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